

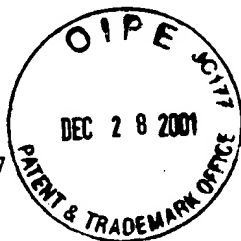
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of

M. Natsuhara, et al.

Serial No.: 09/342,537

Filed: June 29, 1999



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Group Art Unit: 3723

Examiner: W. Berry

For: CERAMICS BASE PLATE AND METHOD OF PRODUCING THE SAME

APPEAL BRIEF

Commissioner for Patents
Washington, DC 20231

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed November 1, 2001.

I. REAL PARTY IN INTEREST

The real party in interest is Sumitomo Electric Industries, LTD.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeal or interferences.

III. STATUS OF CLAIMS

Claims 1 through 8 are pending in this application of which claim 8 stands withdrawn from consideration pursuant to the provisions of 37 C.F.R. §1.132(b). Claims 1 through 7 have been finally rejected. It is from the final rejection of claims 1 through 7 that this Appeal is taken.

IV. STATUS OF AMENDMENTS

No amendment has been filed subsequent to the most recent Office Action dated September 25, 2001.

V. SUMMARY OF THE INVENTION

The present invention addresses and solves problems attendant upon conventional methods of dividing a ceramic sintered base plate into ceramic base plates with a cutting blade (page 1 of the written description of the specification, lines 10 through 16). The problems attendant upon such conventional practices include high processing costs (page 1 of the written description, lines 19 through 23 and page 2 of the written description, lines 8 through 11 and 20 through 22), generation of faults lowering the breaking strength (page 3 of the written description, lines 11 through 13), generation of defects (page 4 of the written description, lines 4 through 9), and reduction in dimensional accuracy (page 4 of the written description, lines 10 through 13.) Another significant problem attendant upon conventional practices is the generation of ammonia if water is employed as a cooling medium in cutting a sintered ceramic base plate made of aluminum nitride (page 3 of the written description of the specification, first full paragraph).

The present invention addresses and solves such problems by providing an elegantly

sophisticated method of dividing a ceramics sintered base plate by forming a continuous flaw using a flawing tool from one end to another of a surface thereof and then applying an external force (claim 1). Embodiments include the use of a flawing tool made of a cemented carbide or diamond (claim2) and forming the continuous flaw to a depth of 1/100 to 1/10 of the thickness of the ceramics centered base plate (claim4). Advantageously, an embodiment of the present invention avoids the use of a cooling medium (claim 7).

VI. ISSUES

A. The Rejections:

(1) Claims 1 through 7 stand finally rejected under the second paragraph of 35 U.S.C. §112;

(2) Claims 1 and 7 stand finally rejected under 35 U.S.C. §102 for lack of novelty as evidenced by Boada Sucarrats; and

(3) Claims 2 through 6 stand finally rejected under 35 U.S.C. §103 for obviousness predicated upon Boada Sucarrats in view of Yasuga.

B. The Issues Which Arise In This Appeal and Require Resolution by the Honorable Board of Patent Appeals and Interferences (the Board) are:

1. Whether claims 1 through 7 are unpatentable under the second paragraph of 35 U.S.C. §112;

2. Whether claims 1 and 7 are unpatentable under 35 U.S.C. §102 for lack of novelty as evidenced by Boada Sucarrats; and

3. Whether claims 2 through 6 are unpatentable under 35 U.S.C. §103 for obviousness predicated upon Boada Sucarrats in view of Yasuga.

VII. GROUPING OF CLAIMS

The appealed claims do not stand or fall together as a group. Claims 1 through 3 stand or fall together as a group. Appellants separately argue the patentability of each of the claims 4, 5, 6 and 7.

VIII. THE ARGUMENT

1. The Rejection of claims 1 through 7 under the second paragraph of 35 U.S.C. §112.

In rejecting claims 1 through 7 the Examiner has decided not to comply with consistent judicial precedent. Rather, the entire rejection is based upon questions and conclusions. In imposing the rejection, the Examiner has apparently ignored the fact that indefiniteness under the second paragraph of 35 U.S.C. §112 is a question of law. *Zoltek Corp. v. United States*, __ F.3d __, 57 USPQ2d 1257 (Fed. Cir. 2000); *Personalized Media Communications LLC v. U.S. International Trade Commission*, 161 F.3d 696, 48 USPQ2d 1880 (Fed. Cir. 1998); *Tillotson Ltd. V. Walbro Corp.*, 831 F.2d 1033, 4 USPQ2d 1450 (Fed. Cir. 1987); *Orthokinetics, Inc. v. Safety Travel Chairs Inc.*, 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). The Examiner has also ignored the requirement to provide a basis and fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art, with the supporting specification in hand, would not be able to reasonably ascertain the scope or protection defined by a claim. *In re Okuzawa*, 537 F.2d 545, 190 USPQ 464 (CCPA 1976). Significantly,

consistent judicial precedent holds that reasonable precision in light of the particular subject matter involved is all that is required by the second paragraph of 35 U.S.C. §112. *Zoltek Corp. v. United States, supra.*; *Miles Laboratories, Inc. v. Shandon, Inc.*, 997 F.2d 870, 27 USPQ2d 1123 (Fed. Cir. 1993); *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1988); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986). Appellants submit the Examiner has made no effort to assess how **one having ordinary skill in the art** would have interpreted the claims in light of and consistent with the supporting specification. *Zoltek Corp. v. United States, supra.*; *Miles Laboratories, Inc. v. Shandon, Inc., supra.*; *Budde v. Harley-Davidson, Inc.*, ___ F.3d ___, 58 USPQ2d 1801 (Fed. Cir. 2001).

Clearly, the Examiner did not discharge the initial burden of providing a basis in fact and/or cogent technical reasoning to support the ultimate legal conclusion that one having ordinary skill in the art would not be able to ascertain the scope of protection defined by the claims, when reasonably interpreted in light of and consistent with the supporting specification. Merely posing questions falls far short of discharging the initial burden of providing a basis to support the asserted definiteness under the second paragraph of 35 U.S.C. §112. Appellants have exercised their right to claim what **they** regard as their invention. *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979); *In re Borkowski*, 422 F.2d 904, 164 USPQ 642 (CCPA 1970).

The issue is not one of English grammar. The issue is not what the Examiner may view as "vague, indefinite, and/or awkwardly and confusing worded". Rather, the overarching issue is whether **one having ordinary skill in the art** would be able to understand the scope of the claimed invention when **reasonably** interpreted in light of and **consistent with** the written description of the specification. *Zoltek Corp. v. United States, supra.*; *Miles Laboratories, Inc. v.*

Shandon, Inc., supra. On this issue, the Examiner's exposition of the rejection is not on point.

Appellants note that claim 1 is drawn to a **method** comprising the **manipulative step** of "forming a continuous flaw" by "using a flawing tool". Applicants have difficulty conceiving of one having ordinary skill in the art, out in the real world, who would be so confused by the claim language as not to be able to understand the claimed invention. Indeed, the Examiner did not even contend that one having ordinary skill would be confused. The Examiner asks questions but does not provide any basis to support the legal conclusion that the recited manipulative step of forming a continuous flaw runs afoul of the second paragraph of 35 U.S.C. §112.

Claim 1 also requires the manipulative step of **dividing** the ceramic sintered base plate by applying an external force. The Examiner's question is not understood. Again, Applicants have difficulty conceiving one having ordinary skill in the art who would not be able to understand the claimed invention. The Examiner's questions do not discharge the judicially imposed burden of explaining **why** the claims run afoul the second paragraph of 35 U.S.C. §112. *In re Frilette*, 423 F.2d 1397, 165 USPQ 259 (CCPA 1970).

Claim 2 specifies that the flawing tool is made of a cemented carbide or diamond. Manifestly, the claimed method requires the use of a flawing tool which is made of a ceramic carbide or diamond. Applicants are at a loss to understand why one having ordinary skill in the art would have any difficulty understanding that concept. Had Applicants intended to claim a method of making a flawing tool, then Applicants would have done so. Rather, Applicants are claiming a method of producing ceramic base plates employing manipulative steps inclusive of forming a continuous flaw using a flawing tool which, in turn, is made of a cemented carbide or diamond. Applicants would stress that consistent judicial precedent requires that claims be

interpreted in light of and consistent with the written description of the specification through the eyes of one having ordinary skill in the art. *Zoltek Corp. v. United States, supra.*; *Miles Laboratories, Inc. v. Shandon, Inc., supra.*

As to the comments with respect to claim 7, the Examiner has conspicuously declined to accept Appellants' invitation to cite a statutory or judicial basis for concluding a negative limitation per se, renders a claim indefinite. Applicants have the right to define what **they** regard as **their** invention. *In re Ehreich, supra*; *In re Borkowski, supra*. Negative limitations, per se, do not render a claimed invention indefinite. *In re Marosi, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983)*. Appellants are free to define what they regard as their invention. *In re Ehrreich, supra*; *In re Borkowski, supra*.

The Examiner also asserted that claim 5 through 7 are improperly dependent upon and do not further restrict the subject matter of a previous claim. Appellants disagree. The Examiner has not provided any basis to support such assertions? Appellants find nothing in the Examiner's exposition of the rejection which in any way attempts to assess how one having ordinary skill in the art would have interpreted the claims in light of and consistent with the written description of the specification as judicially required. *Zoltek Corp. v. United States, supra*; *Miles Laboratories, Inc. v. Shandon, Inc., supra*.

Moreover, Appellants submit that claims 5 through 7 do, indeed, restrict the claims upon which they depend by requiring the selection of a ceramic sintered base plate with a particular hardness (claim 5), made of a particular material (claim 6), and in eschewing the using of a cooling medium (claim 7). Again, indefiniteness under the second paragraph of 35 U.S.C. §112 is not a matter of grammar or syntax, but of law. *Zoltek Corp. v. United States, supra*; *Personalized Media Communications LLC v. U.S. International Trade Commission, supra*;

Tillotson Ltd. v. Walbro Corp., supra.; Orthokinetics Inc. v. Safety Travel Chairs Inc., supra.

Based upon the foregoing, Appellants submit that a prima facie basis to deny patentability to the claimed invention under the second paragraph of 35 U.S.C. §112 has not been established.

Appellants, therefore, submit that the imposed rejection of claims 1 through 7 under the second paragraph of 35 U.S.C. §112 is legally erroneous.

2. The Rejection of Claims 1 and 7 under 35 U.S.C. §102 for lack of novelty as evidenced by Sucarrats.

The factual determination of lack of novelty under 35 U.S.C. §102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into possession of one having ordinary skill in the art. *Helifix Ltd. v. Blok-Lok, Ltd.* 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, INC.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994). Moreover, and quite significantly, in imposing a rejection under 35 U.S.C. §102, the Examiner is required to specifically identify, i.e., point to "page and line", wherein a reference is believed to disclose each feature of a claimed invention. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); *Lindemann Maschinenfabrik GMBh v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984). That burden has not been discharged. At any rate, there are significant differences between the claimed invention and the methodology of Sucarrats that scotch the factual determination that Sucarrats identically describes the claimed invention within the meaning of 35 U.S.C. §102.

Specifically, as argued throughout prosecution, the method defined in independent claim 1 requires the manipulative step of forming a continuous flaw on at least one surface of a ceramic

sintered base plate. It is **not** apparent and the Examiner has **not** pointed to "page and line" wherein Sucarrats discloses a method involving a sintered base plate. *In re Rijckaert, supra*; *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., supra*. Rather, the Examiner generalizes without any factual support, asserting that Sucarrats discloses ceramics which encompasses ceramic sintered base plates.

Firstly, the Examiner's speculation falls short of establishing, by **facts** lack of novelty as required by consistent judicial precedent. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Secondly, the Examiner has not identified in the prior art any basis in fact upon which to support the conclusion that he ceramic articles contemplated by Sucarrats would **necessarily** include **sintered** base plates.

Thirdly, the Examiner has not factually established that the tool disclosed by Sucarrats is even **capable** of scoring a ceramic sintered base plate. Appellants, therefore, question whether the Examiner has even established that Sucarrats would have **enabled** one having ordinary skill in the art to cut a ceramic sintered base plate. *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 13 USPQ 2d 1301 (Fed. Cir. 1989); *In re Grose*, 592 F.2d 1161, 201 USPQ 57 (CCPA 1979). Nonenabling references do not place the claimed invention into possession of one having ordinary skill in the art. *In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 167 (Fed. Cir. 1994; *In re Grose, supra*.

The above argued differences between the claimed invention and the methodology of Sucarrats undermine the factual determination that Sucarrats identically describes the claimed invention within the meaning of 35 U.S.C. §102. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 1230 USPQ 81 (Fed. Cir. 1986).

Appellants, therefore, submit that the imposed rejection of claims 1 and 7 under 35 U.S.C. §102 for lack of novelty as evidenced by Sucarrats is not factually viable.

3. The Rejection of Claims 2 through 6 under 35 U.S.C. §103 for obviousness predicated upon Sucarrats in view of Yasuga.

The imposed rejection under 35 U.S.C. §103 is based upon the Examiner's conclusion that one having ordinary skill in the art would have been motivated to conduct the method disclosed by Sucarrats employing a diamond flawing tool as disclosed by Yasuga. The Examiner considered the depth of the flaw and the material of the base plate to be obvious. Appellants disagree.

Appellants would initially point out that claims 2 through 6 depend from independent claim 1. Sucarrats neither discloses nor suggest the fundamental concept of forming a continuous flaw on at least one surface of a ceramic sintered base plate. The secondary reference to Yasuga does not cure the argued deficiencies of Sucarrats. Accordingly, even if the applied references are combined, the claimed invention would **not** result. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

Appellants also separately argue the patentability of claims 4 through 6. Specifically, the Examiner has made no "clear and particular" factual findings as to a specific understanding or a specific technological principle which would have **realistically** impelled one having ordinary skill in the art to further modify the particular methodology of Sucarrats to arrive at a method corresponding to that defined in claims 4 through 6, wherein the depth of the flaw, hardness of the ceramic sintered base plate and material of the base plate are specified, based upon facts--not generalizations. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000);

Ecolcohem v. Southern California Edison, Co., 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re Kotzab*, 217 F.3d 1265, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Significantly, the Examiner has failed to establish by objective evidence that the parameters recited in each of claims 4 through 6 are, indeed, art-recognized result effective variables. *In re Rijckaert, supra*; *In re Yates*, 663 F.2d 1054, 211 USPQ 1149 (CCPA 1981); *In re Antonie*, 559 F.2d 618, 195 USPA 6 (CCPA 1977).

Moreover, Appellants would urge that Sucarrats neither addresses nor solves the problems addressed and solved by the claimed invention which occur upon attempting to divide a ceramic centered base plate. Thus, the problem element constitutes a potent indicium of nonobviousness which the Examiner has improperly ignored. *North American Vaccine, Inc. v. American Cyanamid Co.*, 7 F.3d 1571, 28 USPQ2d 1333 (Fed. Cir. 1993); *Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 15 USPQ2d 1321 (Fed. Cir. 1990); *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989).

It should, therefore, be apparent that the Examiner has not established a prima facie basis to deny patentability to the claimed invention under 35 U.S.C. §103. In addition, upon giving due consideration to the problem addressed and solved by the claimed invention, the conclusion appears inescapable that one having ordinary skill in the art would **not** have found a claimed invention **as a whole** obvious within the meaning of 35 U.S.C. §103. *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (Fed. Cir. 1984). Appellants, therefore, submit that the imposed rejection of claims 2 through 6 under 35 U.S.C. §103 for obviousness predicated upon Sucarrats in view of Yasuga is not factually or legally viable.

IX. PRAYER FOR RELIEF

Based upon the foregoing, Appellants submit that the Examiner has not established a

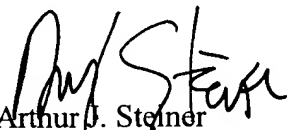
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U.S.C. §112, 35 U.S.C. §102 or 35 U.S.C. §103. Appellants, therefore, respectfully solicit the Honorable Board to reverse each of the Examiner's rejections.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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APPENDIX

1. A method of producing ceramics base plates, which method comprises:
forming a continuous flaw on at least one surface of a ceramics sintered base plate from end to end with a flawing tool; and
dividing the ceramics sintered base plate along the flaw by applying an external force.
2. A method of producing ceramics base plates as claimed in claim 1, wherein a blade edge portion of the flawing tool is made of a cemented carbide or diamond.
3. A method or producing ceramics base plates as claimed in claim 2, wherein the blade edge portion of the flawing tool is made of diamond.
4. A method of producing ceramics base plates as claimed in claim 2, comprising forming the continuous flaw to a depth of from 1/100 to 1/10 of the thickness of the ceramics sintered base plate.
5. A method of producing ceramics base plates as claimed in claim 1, wherein Vickers hardness of the ceramics sintered base plate is 1,500 Hv or lower.
6. A method of producing ceramics base plates as claimed in claim 1, wherein the ceramics sintered base plate is an aluminum nitride sintered base plate.

7. A method of producing ceramics base plates as claimed in claim 1, comprising forming the flaw on the surface of the ceramics sintered base plate and at dividing the ceramics sintered base plate without employing a cooling medium.